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Implications of the Relaxation Proposals to  
Military Potential of Communist China

Background

The military potential of Communist China is severely limited by its primitive industrial economy and by serious deficiencies in transport and other services essential to both economic growth and military expansion. The Communist regime has ambitious plans and programs for broadening the industrial base for military potential, but can meet their planned goals only by substantially increasing imports. Current plans emphasize the heavy industry, power, communication, and transport sectors. The European Soviet Bloc is the principal source of essential imports in line with the basic Sino-Soviet Bloc policy of self-sufficiency. However, this policy is modified when important requirements can be fulfilled more feasibly through importation from the Free World. Trade and financial controls of the Free World, and inability of the Communist regime to significantly increase exports have greatly limited their use of Free-World products to improve Communist military potential.

Composition of China Trade Control Lists

The international control lists applying to Communist China trade (combined COCOM and CHINCOM Lists) cover all munitions, atomic energy items, and comprehensive coverage of capital equipment, industrial raw materials, electronics, and service equipment indispensable to an expanding economy and the growth of military potential. Except for a few basic raw materials, such as copper, items comprising the differential between the COCOM and CHINCOM lists are probably of greater current utility to the

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Chinese Communists than the more complex products on the COCOM Lists. There are 305 listings in the differential area. At least 6 listings are in themselves key categories, such as machine tools, n.e.s., while others are narrowly defined items. This heterogenous situation results from the piecemeal manner in which the differential developed. Initially the differential listings were purposely broad, but as items or parts of items were deleted from the COCOM List, they were added, as deleted, to the CHINGOM List.

#### Analysis of the Deletion Proposals

Both the UK and Japanese proposals would, if agreed to wholly or in substantial part, denude the differential lists of meaningful content. The UK proposed for deletion 87 items, and the Japanese 119 items (there is a high degree of duplication) out of a total of 305 items on the differential lists. These statistics are grossly misleading, however. Both proposals include all the listings which are in fact categories, so that even on an "item" basis the deletions proposed would amount to far more than 50 percent of the total differential. Moreover, deletion of these "category" or broad definition listings would encroach on many "item" listings because of overlapping definitions. In addition, when the items proposed for deletion are grouped functionally, it becomes apparent that all the key functional sectors (that is, construction, transport, communications, etc.) would be weakened to the point where retention of the remaining portions of these sectors could not be justified.

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Evaluation of Importance of Differential Listings  
to Communist Chinese Military Potential

The announced objectives of the Chinese Communists place heavy emphasis on expanding the industrial base as well as the essential services or "logistic" sectors of the economy; little importance is attached to consumer interests. The differential lists are important to military potential because of their relationship both to the expansion of the industrial base, and to the logistic sectors of the economy. Development of the industrial base has longer run implications, since creation of the production capacity essential to a modern military machine will require an extended period of growth. Development of the logistic sectors is of more immediate importance to military potential because any current improvement adds to the maneuverability of troops and materiel in support of military operations, as well as to the expansion of the industrial base. No judgment is <sup>made</sup> possible as to whether the "long-term" or "short-term" implications are more important. However, in TAB A the differential lists are arranged in these two broad categories.

The importance of the differential listings to military potential can also be analyzed on the basis of their functional relationships. The purpose of the controls is to deter expansion of those sectors of the Chinese Communist economy which are of key importance to military potential, either long-term or short-term. TAB A arranges the differential lists into functional sectors, some listings falling into more than one sector. ~~These sectors are then the effect of the remainder~~

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These sectors are all considered to be of key importance because the announced planning goals give them high priority and intelligence analysis shows them to be in critical short supply. (See TAB A ~~and B~~)

Selection of Listings of Least Advantage to the  
Military Potential of Communist China

Selection of listings of least advantage is largely a matter of eliminating those which are not an important component of a key sector of the economy. The importance of the listings may be either because they are the major or sole listing in the functional sector, or because their deletion would weaken the effect of the remainder of the functional sector, (for example, deletion of motor vehicles listing would weaken the entire land transport sector).

In addition, clear evidence that the supply position in the Bloc is such that all estimated requirements for rapidly expanding the military potential, could be met internally either through direct production or substitution, is considered a reason for deletion.

In TAB A listings from the entire differential are arranged in a "least advantage" category, distinguished according to whether they were eliminated for "functional sector" or "supply" reasons. The listings which appear on the UK and Japanese deletion lists are so marked.

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Selection of Differential Listings of Greatest Advantage  
to the Communist China Military Potential

All the remaining listings are considered to be of great advantage to the Communist Chinese military potential, and there is no meaningful basis on which to distinguish their relative importance. The listings cover the entire differential with notation of whether they appear on the UK or Japanese differential list. The listings are arranged in TAB A according to whether they relate to the industrial base (long-term) or the logistics sector (short-term) of the Communist China economy. Also, within these broad groups, the listings are arranged according to functional relationship. There is no valid basis for distinguishing the relative advantage to the Communist Chinese military potential of the designated sectors.

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EVALUATION OF THE RELATION OF ITEMS PROPOSED FOR  
DECONTROL TO CONTINUED IMPROVEMENT IN COMMUNIST  
CHINESE MILITARY POTENTIAL

In order to determine the implications of denial of items on the United Kingdom deletion proposal to the military potential of Communist China, the items where feasible have been functionally grouped and presented in relation to a like grouping of the total China trade (differential) embargo list. The list of 119 items proposed by Japan for deletion from control is also shown as a matter of interest, and to portray the similarity in scope and effect of the two lists.

For the purpose of brevity, short titles have been used to identify items in the groupings which follow. It should be noted, however, that numerous definitions for China differential items are very broad and, strictly or by strong implication, could be interpreted to cover also items which actually have not been proposed for deletion. To this extent, the current item definitions are not always susceptible "en toto" to strategic review. For example, one item not proposed for deletion by either the U.K. or Japan (Item C-405) "Steel castings and forgings for railroad equipment" can be interpreted as being included in the proposal to decontrol (Item C-471) "Railway rolling stock and parts" and, (Item C-470) "Locomotives and locomotive parts." Deletion of key items covered by broad definition might thus have a broader implication. [and should be subjected to further careful scrutiny prior to any multilateral negotiations.]

In order to afford an overall impression of the relationship of the U.K. and Japanese proposals for deletion from the China differential as a whole, the following recapitulation is given:

	Total	Proposals for Deletion			Not Proposed
		UK	Japan	UK & Japan	by Either
				(Same item)	
Total Number of List Items and Item Portions rated	305	87	119	55	154
Less Split-off Item Portions	- 8	-7	- 8	- 7	0
Number of Actual List Items Affected	297	80	111	48	154

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2.

LOGISTIC FUNCTIONS - *short-term*

a. Construction Function

(1) Intelligence.

The production of even the simplest type of construction equipment in China is negligible and the park of existing equipment is also very limited. Such equipment is essential to the large reservoir projects currently under construction, for building strategic roads, railways and airfields, and for industrial expansion, scheduled for completion in the period 1955-1960.

While equipment of this group is produced in the European Soviet bloc, its resources are already heavily committed to its internal expansion. Communist China has made recent efforts to obtain listed construction equipment from free world suppliers and has let contracts in anticipation of the lifting of embargo restrictions.

(2) Listing of controlled construction equipment and proposed deletions.

China List No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C 131	Pumps designed for working pressure of 75 PSI and over	x		
C 210	Welding machines and equipment	x		
C 255	Diesel engines 25 HP and over	x	x	
C 256	Internal combustion engines	x	x	
C 266	Electric generating equipment (C-255 or C-256 powered)	x	x	
C 320	Industrial-type trucks, trailers, stackers with crane booms, winches etc.	x		
C 321	Civil Engineering and building equipment. concrete mixers - concrete pavers - bituminous mixers, spreaders, pavers - crushing and screening outfits - graders - rollers - bulldozers - spray guns (cement)	x	x	
C 351	Mining equipment and machinery	x	x	

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China List No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C 380	Compressors (NES 1380) with delivery pressure excluding 110 PSI	x	x	
C 381	Portable hand-held mining and quarrying power tools (pneumatic, electric and petrol operated)	x	x	
C 383	Crushing equipment, crushers, grinders, pulverizers	x		
C 384	Conveyor belting	x		
C 841	Rubber hose and tubing			
C 575	Surveying instruments	x	x	
C 385	Core drills - core drill bits	x		
C 771	Petroleum asphalt	x		
C 635	Semi-finished steel products	x		
C 362	Jacks, 10 ton and over			
C 430	Steel cable			
C 701	Explosives			
C 472	Railway rails	x	x	

b. Transportation Function

(1) Intelligence.

The trade of Communist China is now estimated to be carried proportionately half by sea and half overland, largely over the Trans-Siberian railway. To date, China has not been in a position to make a significant contribution to the fulfillment of her requirement for near-seas and ocean-going shipping. The construction of two major wide-gauge rail lines linking China with the Russian railway system will eventually make a major contribution to expediting the international overland traffic.



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For the proximate future, this traffic will continue to be limited by the single connecting East-West rail artery (the Trans-Siberian RR)

(a) Rail

In order to remove the transportation bottleneck to continued economic expansion and military maneuverability and support, about 70% of planned expenditures earmarked for transportation has been allocated to the improvement and expansion of the railroads. Communist China is not meeting the requirements for rails specified in recently stepped up construction plans. During the current plan 6250 miles of track are to be laid of which 2500 miles represent new lines. Even with the planned augmentation of equipment manufacturing and repair facilities, Communist China will continue to import for a number of years locomotives and rolling stock, including semifinished materials, in order to meet its equipment and traffic goals. While the European Soviet bloc potentially could supply much of the additional locomotive equipment required by Communist China, there is little evidence to indicate it will in fact do so. The new Soviet 5-year plan gives considerable emphasis, for example, to the development and rehabilitation of the Russian System, and the Satellite Systems also have growing requirements.

(b) Water

Communist China has some 10,000 ocean going junks with a total cargo carrying capacity of approximately 402,000 tons. Some of these junks, sampans and fishing vessels have been armed for patrol and coastal escort duty; others are used as naval auxiliary units, e.g. as radar pickets. Chinese Communist junks operate largely along the southern coastal areas and generally represent substantial military transport reserve capacity.

It should be noted that at present the embryonic and non-ocean-going Chinese merchant fleet is employed in river and coastal traffic. There is still a dearth of good harbors along the China coast. Of the hundred or more ports and landings along the coast only a handful are of major importance to foreign and domestic traffic. Rather ambitious plans have been announced, however, for the enlargement of this branch of transport. The accomplishment of these plans would create substantial demands for construction items, and storage and distribution systems.

While Communist China does have shipbuilding capacity for some types of ships, this capacity is now devoted almost entirely to ship repair on Chinese and Soviet account, to coastal tugs, barges and ships, or to naval construction. Decontrol therefore would permit continuation of Communist China naval construction programs unhampered.

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Increased availability of such items as plate, boiler tubes, boilers, diesel engines, etc., which have been proposed for decontrol, will provide considerable aid to Chinese shipbuilding and ship repair programs, and in the case of large diesels alone would obviate the tortuous overland haul from Western Russia.

(c) Road

The need for vehicles, particularly trucks, will increase. At present, road transport of the long-haul type is almost entirely absent in areas served by river, coastal, and rail transport. More important commercial roads represent about 50,000 miles of the 86,000 miles now open to traffic. Most of the 6,000 miles of new roads built since 1949 have linked remote regions with the existing road system of south-central China. China has no highways in the accepted western sense.

China's present production capacity for highway motor vehicles is nil; production cannot commence until new plants are built; and operating; for example, the first Chinese truck might be produced with much fanfare before the end of 1956; substantial production is not scheduled until 1960. In view of the backlog of unfilled delivery commitments and demand for motor vehicles of all types within the USSR and some of the satellites, only vehicles required for urgent military needs and key construction projects are being made available to China by the rest of the bloc. Strong attempts to procure automotive equipment and parts in free-world countries are continuing. A larger consignment of British passenger automobiles to China in 1954 received considerable notice from the Communist press.

Included in the list of items proposed for decontrol in this category are two items covering diesel engines. (Item C-255, Diesel Engines 25 hp and over. Item, 3256 Diesel engines, n.e.s., as follows: (a) 300 to 800 hp with rotary speeds of 600 rpm or over; (b) 800 hp or over, with rotary speeds of 400 rpm or over; (c) 1,500 hp or over, with rotary speeds of 200 rpm up to but not including 400 rpm). If these items are decontrolled, all diesel engines except those on IL-I would be available for export to Communist China.

China's current production and production capacity of diesel engines is small. Diesel engines have been made in at least three plants in Dairen, Tsingtao and Shanghai; there are several other plants where diesel engines could be made on a custom basis. It has been reported that the largest engine built domestically to date has a rating of about 250 hp, but it is not known whether it is in commercial production. Smaller engines have been made for various applications in agriculture and industry, but it is doubtful that serial production has been achieved.

The present Five Year Plan gives little information on China's program for diesel engine production beyond the statement that experimental production of a diesel engine of 675 hp is to start during the current plan. This type of an engine would be adequate for powering small seagoing vessels and small electric power stations. There is no specific information on the capital investment expansion required to increase the production of these diesel engines in China.

China will continue to need a wide variety of engines for industry and agriculture. However, the lighter weights of engines, mostly under 100 hp, are used in the bloc to power heavy trucks and tractors, and China's plans call for production of 15,000 tractors in 1960. At present, no such vehicles are being produced in China. It is very likely that plans for future production of heavy trucks and tractors in China include the construction of shops making diesel engines for this purpose. Small diesel engines also will be needed to power such industrial machinery as pneumatic drills, mining machinery, pumps, irrigation pumps, compressors and portable electric generators. Plans for expansion of the electric power generating equipment industry also may include provisions for making diesel engines. But to achieve a large output of diesel engines, China will have to make substantial imports of fairly large foundry and machine shop equipment.

The rest of the Soviet bloc has been producing diesel engines for many years and has the technical know-how approximately equal to that of the free world save in the most advanced experimental types. Some difficulties have been reported in the production of crankshafts and high-speed fuel injectors, but in the conventional bloc know-how is adequate. On the other hand, the supply of diesel engines, especially marine diesels, has not been adequate in the bloc and engines and parts have been sought by the European satellites from the western countries. The tremendous Soviet Submarine Construction Program also places a heavy demand on diesel production facilities.

The decontrol proposal, if implemented, would end controls on all but the very high specialized types of engines and permit export to China of all kinds of engines needed for general industrial and military uses.

- (2) Listing of controlled transportation equipment and proposed deletions.

Transportation				
China		Proposed Deletion		
List				
No.	Short Title	Japan	UK	Group Footnote
A. <u>RAIL</u>				1
C 470	Locomotives and locomotive parts	x	x	2
C 471	Railway rolling stock and parts	x	x	2
C 472	Railway rails	x	x	
C 266	Equipment for electric power generating and rectifying	x	x	
C 255	Diesel engines	x	x	
B. <u>WATER</u>				
C 401	Watercraft and important components		x	2
C 255	Diesel engines, 25 hp and over	x	x	
C 509	Ultrasonic, radar, and radio navigation equipment of 3mc or less	x		
C 703	Ships' bottom compositions, anti-corrosive and anti-fouling		x	
C 256	Internal combustion engines	x	x	
C 266	Electric generating equipment	x	x	
C 270	Turbines all types over 300 hp		x	
C 275	Water tube boilers 80,000 pounds - hour steaming capacity			
C 430	Steel cable			
C 405	Steel castings and forgings for marine equipment			
C 502	Detection apparatus - ultrasonic detectors			
C 576	Telescopes and binoculars	x	x	
C 840	Water-lubricated bearings			

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China List No.	Short Title	Proposed Deletion			Group Footnote
		Japan	UK		
C 901	Abaca and sisal; fibres and cordage	x	x		
	C. <u>ROAD</u>				1
C 256	Internal combustion engines	x	x		
C 255	Diesel engines, 25 hp and over	x	x		
C 320	Industrial-type trucks and trailers	x			2
C 450	Motor vehicles and equipment - motorcycles, personnel carriers, station wagons, utilities, buses, tractors, trailers, chassis, components, parts, servicing equipment and materials.	x	x		2
C 140	Containers of the "jerry can" type	x			

Note 1 - Attention is invited to the "Communications Group" - a service vital to transportation.

Note 2 - Broad definitions such as these tend to cover many of the specific items not proposed for deletion.

Note 3 - See "Rubber industry function" for intelligence on this item.

c. Communication Function

(1) Intelligence

Communist China's needs for both wireline and radio communications systems is critical. At present, communications facilities are concentrated in the eastern part of the country. Industry and government consume about 80 percent of the existing communications service. China's stated telecommunications policy is (a) to push wireline construction as fast as possible to insure security of state and military messages, and (b) to give priority to the national defense, military, and political tasks of the state since communications facilities are not adequate to meet other needs.

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For 1954, 37 major construction and expansion projects for long distance telegraph lines were planned. The telegraph system itself has been expanding at the rate of about 11,000 km a year. In 1955 it was announced that telephone lines would be extended by 12,000 km and that 33,000 switchboards would be added to the telephone system. These figures give an indication of the magnitude of expansion being undertaken in wireline communications, and of the importance of electrical, electronic, communications, metals (i.e. copper and aluminum) and instrumentation sectors to this task.

C Communist China produces little or no radio or land line communications equipment. At present one signal equipment plant is under construction which was designed and is being built by East German technicians. This plant, scheduled for completion in 1957, will manufacture radio, telephone and telegraph equipment and some precision instruments. Projected annual production rate for this plant is almost negligible in terms of China's short-term needs.

At present, China is importing almost all of her requirements in radio and land line communications equipment. Most of it comes from the European satellites and some of it from the free world.

Communist China is in critical need of all types of precision instruments and control apparatus necessary to satisfactory communication operation.

(2) Listing of controlled communication items and those proposed for decontrol.

China List No.	Short Title	Proposed Deletion			Group Footnote
		Japan	UK		
C 266	Power equipment	x	x		
C 605	Transformer, choke, laminations and core assemblies				
C 610	Flexible metal tubing		x		
C 617	Single and multicore electric power cables	x	x		
C 650	Lead in semifabricated and other such forms	x	x		

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China List No.	Short Title	Proposed Deletion			Group Footnote
		Japan	UK		
C 501	Telecommunication equipment and non-specialized components including tubes, capacitors, resistors, transformers, chokes, coils, antennae and power supplies	x			1
C 502	Detection apparatus	x			
C 503	Ionosphere recording automatic apparatus				
C 504	Sub-miniature electronic circuit components	x			
C 505	Coaxial electric cable				
C 507	Photoelectric cells				
C 509	Radar and radio navigation equipment	x			
C 563	Electric or electronic impulse registers			x	
C 573	Quartz crystals			x	
C 561	Bridges for measuring capacitance, impedance - precision type	x		x	
C 565	Geophysical prospecting equipment including amplifiers with automatic volume control, geophones, etc.			x	
C 566	Measuring and testing instruments	x		x	
C 568	PH meters	x		x	
C 570	Oscilloscopes and parts			x	
C 571	Precision, scientific and optical instruments	x		x	

China List No.	Short Title	Proposed Deletion		
		Japan	UK	Group Footnote
C 577	Voltmeter, ammeters and micro-ammeters	x	x	
C 579	X-ray tubes 1000 PKV and over		x	
C 580	Absorption meters - infra-red		x	
C 582	Electrometers		x	
C 585	Oscillographs, recording		x	

1/ The Japanese propose decontrol, under the definition of C-501, of the following telephone and telegraph (landline) equipment: (i) carrier frequency telephone terminal equipment operating at 10 kc/s and under (3-7 channel equipment); (ii) intermediate repeater and amplifier equipment; (iii) parts and subassemblies; (iv) automatic, magnetic and battery switchboard equipment; (v) inter-phone systems; (vi) toll and switchboard cable; (vii) bare wire line; and (viii) power supply line. This equipment would give Communist China a modern efficient telephone system.

The following telegraph equipment would be deleted: (i) all voice frequency telegraph terminal equipment; (ii) teleprinters; and (iii) teletype equipment (the latter operating at 200 words or less a minute), this equipment, would give China a modern, efficient telegraph system.

All radio transmitters, subassemblies, and components, except the specialized military types listed under International List Item 1517, would be decontrolled. Acquisition of this equipment would give China radio broadcasting facilities equal to those in free-world countries.



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3. INDUSTRIAL FUNCTIONS

A. The Electric/Electronic Industry

(1) Intelligence

(Also see "Communications" and "Instrument/control apparatus")

Communist China has now the greatest need for equipment for generating, transforming, rectifying and converting electric current, for its transmission and distribution; for control gear and accessories; for substation equipment; and for parts for all of the foregoing.

It is reported that the Bloc production of all categories of coaxial cable has been, and continues to be, less than demand, with active attempts to import still continuing. The principal applications of such cables, as would be covered under C-505, are radar and military or quasi-military communications systems, particularly at the very high frequencies and above.

To reach industrial production goals, the following new factories are scheduled to be built in the 1955-1961 period: 2 electric generator factories, 1 electrical equipment factory, 1 electric wire and cable factory, 1 carbon brush factory, 1 electrical equipment renovation factory, 1 low-voltage switch factory, and 1 transformer factory. Thus, a whole new industry is to be created. China cannot build up this industry without large imports and technical aid. Even if the 1960 goals are met, China's capacity to produce electric/electronic equipment will be modest in terms of the gross needs of the economy.

The proposed deletions would provide Communist China an opportunity to buy electric/electronic equipment which would materially assist (and furnish relief from demands on other Bloc countries) Communist China to swiftly construct, service and maintain indispensable functions of its growing economy and military potential.

Listing of controlled electric/electronic items and proposed deletions. 1/

1/ See electric/electronic items listed under Section \_\_\_\_\_ "Instrument control apparatus" not repeated in this section.

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Item No.	Short title	Japan	UK	Group Footnote
G-201	Electrical components for electric furnaces		x	
G-210	Welding machines	x	x	
G-211	Electrodes			
G-260	Electric motors	x	x	
G-266	Power equipment	x	x	3
G-354	Machines for applying outer conductor of coaxial electric cables			
G-355	Cable making machinery			
G-386	All tools/dies incorporating diamonds			
G-501	Telecommunication equipment	x		2
G-504	Sub-miniature electronic circuit components	x		
G-505	Coaxial electric cable			
G-509	Radar and Radio navigation equipment	x		
G-617	Single and multicore electric power cable	x	x	
G-610	Flexible metal tubing		x	

2/ See - "Communications"

3/ See - "Electric Power Production and Distribution" footnote 1/

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## B. Electric Power Production and Distribution

## (1) Intelligence.

Currently China is severely short of electric power. The development of electric power and of an industry to produce electric power equipment are among the principal goals of China's present plan and the cornerstone of the future industrial development of the country.

China's small electric power generating capacity, consisting of electric power generating machinery supplied by many different countries (Germany, Japan, U.K., U.S.), suffered heavy damage during World War II. It was partly dismantled by invading Soviet armies which took some installations as booty. Some of the latter equipment was subsequently returned, but in poor condition. Finally, during the ensuing civil war between the Nationalists and the Communists still further damage was inflicted on the power capacity. Some of the stations were rebuilt after 1948 but the equipment remains obsolete and in poor condition.

Communist China's present (1955) installed electric power generating capacity is approximately 3,000,000 kw and is concentrated in a few industrial centers in the East and in southeastern Manchuria. This is approximately equal to the electric power generating capacity of North Carolina. Most of the stations are small, a few exceeding 15,000 kw in capacity.

The much revised first Five Year Plan now calls for an addition to installed electric power generating capacity of 1,060,000 kw, an increase of approximately 33 percent, to bring total installed capacity up to about 4,060,000 kw by the end of 1957.

Specifically, the current Five Year Plan calls for the completion of 54 new electric power stations, of which nine are to be designed by Russian engineers. The majority of the stations will be thermal stations. According to Chinese announcements, work will also begin on another 38 stations, apparently of larger size, which are not scheduled for completion until later.

Since China's plans call for development of industry scattered throughout the country's interior, where there is little or no electric power at present, the current plan emphasizes small and middle sized thermal stations (5,000-15,000 kws) with equipment of the type that has been proposed for decontrol. The full harnessing of China's vast hydroelectric power potential and the control of rivers awaits further industrial development of the country. However, six hydroelectric power plants are being constructed or renovated at present which will require equipment of about 50,000 kw.

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China has made persistent and vigorous attempts to contract with free-world suppliers for complete power units and spare parts. For example, contracts were concluded with Brown-Boveri (Switzerland) in 1954 for one 25,000 kw power plant and five other plants reportedly with a capacity of 10,000 kw each. Other contracts with free-world suppliers have been signed or are in an advanced stage of negotiation, with actual deliveries contingent only on the deletions proposed.

The continuing series of requests to COCOM/CHINCOM (by U.K., Belgium, France, Japan, and West Germany) for permission to ship replacement parts for electric power generating equipment to China reflects China's continued dependence in this diversified category on free-world suppliers. Owing to the multi-national origin of installed equipment, free-world parts are especially needed to reclaim, rehabilitate, or maintain aging plants installed in the course of the industrialization following World War I.

A relaxation in COCOM/CHINCOM controls on this equipment might not only remove a major bottleneck for Chinese procurement of equipment and parts, but might cause China to revise her power and consequent industrialization goals upward. In any event, the demand for free-world equipment and parts is strong and voluminous and is expected to continue for at least two decades.

The decontrol proposal, if implemented, would decontrol some of the critically needed non-ferrous metals in China. The decontrol of electric cable, electric motors, power generating equipment, etc., for example, would tend to nullify the existing controls on copper, the embargo of which has been an objective of the U.S. economic defense policy for several years.

From a strategic point of view, decontrol of electric cable would be undesirable also because it would permit a rapid improvement in China's weak communications system, and would reflect a direct net contribution in the military operations field.

(2) Listing of Controlled Electric Power Production and Distribution Items and Proposed Decontrol.

Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-131	Pumps - Designed to operate at temperatures of 220 F. & over Designed for working pressures of 75 PSI and over	x		
C-117	Water Treatment - equipment	x		

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Item No.	Short Title	Proposed Deletions		Group Footnote
		Japan	UK	
C-121	Evaporators	x		
C-133	Valves and Cocks - Partially or wholly integral with a control mechanism designed for working pressures of 300 or more PSI			
C-141	Gauges - for measuring pressures over 1470 PSI			
C-250	Condenser Tubes - (seamless cupro-nickel)			
C-256	Internal Combustion engines	x	x	
C-255	Diesel Engines 25 HP and over	x	x	
C-260	Electric Motors	x	x	
C-266	Electric Generating - transforming, rectifying, converting, transmission, power distribution, control gear and accessories	x	x	1
C-266	Substation Equipment		x	1
C-266	Parts - for above two items	x	x	1
C-266	Boiler House Plant	x	x	
C-270	Turbines - All types over 300 HP		x	
C-275	Water-Tube Boilers - 80,000 pound-hour steam capacity			
C-354	Machines - for applying outer conductor of coaxial electric cable			
C-380	Blowers - with capacity of over 35,000 cubic feet per minute		x	
C-395	Precipitators	x		
C-617	Single or multicore electric power cable (NES)	x	x	
C-630	Aluminum - wrought or worked by rolling, drawing	x		

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Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-650	Lead - sheet, strip, pipe and tube	x	x	
C-384	Conveyor belting	x		
C-383	Crushing equipment, crushers, grinders, pulverizers	x		
C-561	Bridges for measuring capacitance, impedance, etc.	x	x	
C-571	Precision - instruments	x	x	
C-577	Voltmeter, ammeter and microammeters	x	x	
C-582	Electrometers		x	
C-566	Measuring and testing instruments	x	x	

1/ This broad definition is interpreted to also include items C-384, C-131, C-117, C-121, C-133, C-141, C-250, C-275 C-380, C-395, C-383, etc. The broad definition of C-260 proposed for decontrol would, if approved, remove effective control of the entire function.

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## C. Instruments and Control Apparatus. (Manufacture of)

## (1) Intelligence.

Communist China is in critical need of all types of precision instruments and control apparatus necessary to the build-up of a modern industry and to the production of armaments, weapons, planes, military electronic devices, engines of all types, chemicals and explosives, the generating of electric power, etc. As Communist China industrializes, it is reasonable to believe that the Chinese will equip their industry with as much precision, measuring, testing and automatic equipment as feasible.

At the present time, Communist China cannot build precision instruments or electronic automatic equipment. Neither the skilled labor nor the production experience is available and it takes decades to develop. The U.S.S.R. and the European satellites are not in a position to furnish such equipment to the Chinese since by their own admission a critical shortage of these instruments exists in their own countries, and since only a beginning has been made in the development of automatic equipment for use in their own industries.

It is believed that if the devices covered by embargo become available to Communist China, they will plan for substantial purchases of this equipment from the free-world over the next 20 to 30 years.

(2) Listing of controlled instruments, components and control apparatus items and those proposed for decontrol.

## SECTION A - EQUIPMENT PRODUCTS

Item Number	Short Title	Proposed Deletions	
		Japan UK	Footnote
C-141	Gauges		
C-502	Detection apparatus	x	
C-507	Photoelectric cells		
C-560	Balances		x
C-561	Bridges	x	
C-563	Impulse registers		x

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Item Number	Short Title	Proposed Deletions		
		Japan	UK	Footnote
C-564	Electronic heating instruments		x	
C-565	Geophysical equipment		x	
C-566	Measuring and testing instruments	x	x	1
C-571	Precision, scientific and optical instruments		x	1
C-567	Metallurgical microscopes	x	x	
C-568	pH meters	x	x	
C-569	Optical curve generators		x	
C-570	Oscilloscopes (cathode-ray)		x	
C-572	Pyrometers	x	x	
C-574	Spectrographs, spectrometers, monochrometers	x	x	
C-575	Precision Theodolites (surveying instruments)	x	x	
C-577	Voltmeters, ammeters, microammeters	x	x	
C-579	X-ray tubes, 1000 P.K.V.		x	
C-580	Densitometers	x	x	
C-582	Electrometers		x	
C-583	Leak-detecting instruments		x	
C-584	Micro-hardness testers	x	x	
C-585	Oscillographs		x	
C-586	Strain gauge equipment	x	x	
C-620	Platinum thermocouples	x		

Footnote 1 - Broad definitions such as these could be interpreted to cover other items proposed for decontrol and also items which actually have not been proposed

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SECTION B - PRODUCTS ESSENTIAL TO THE PRODUCTION OF  
EQUIPMENT LISTED UNDER SECTION A ABOVE.

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Item Number	Short Title	Proposed Deletion		
		Japan	UK	Footnote
C-910	Raw optical glass			
C-651	Lithium (for high-conductivity copper)			
C-655	Mercury			
C-658	Molybdenum			
C-663	Strontium			
C-667	Tungsten (processed)			
C-620	Platinum (wire-tube)	x		

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#### D. Chemical Industry

The essentiality of chemicals in any picture of national preparedness (or military potential) has dictated great increases in productive capacity since World War II due to technical advances in modern weapons.

The complexity of the chemical industry and the dependence of other industries upon it have led to the following two part appraisal:

##### Part I

##### Chemical Process Industry

Includes manufacturing enterprises, involving large capital investment, which produce inorganic and organic chemicals.

##### (1) Intelligence.

The current shortage of chemicals is one of the main vulnerabilities of China's economy. Unconfirmed reports indicate that other Bloc countries have restricted exports of chemicals to China to conserve such products for use elsewhere. The current Red Chinese plans call for almost a doubling of the output of basic chemicals.

China currently produces practically no chemical equipment. Reports indicate that some chemical producers have had to resort to crude and primitive improvisations to maintain production.

Current plans for increasing the output of chemicals call for the construction and renovation of five chemical production plants with Russian assistance. While no specific information is available on the extent of the Russian assistance, a high Chinese official has stated that only a part of the equipment needed for these plant projects will actually come from the USSR.

The USSR has already encountered difficulties in fulfilling specific delivery commitments for chemical equipment to China. It has been reported that a Chinese delegation to the USSR was referred to a satellite country as a source of equipment for a chemical factory. The satellite country also was unable to furnish the desired machinery without western technical assistance.

There have been persistent efforts by the Chinese to obtain chemical production equipment from the free world. A conspicuous example is China's recent effort to procure through clandestine channels a water treatment plant of a type that the Japanese have now proposed for decontrol.

Items proposed for decontrol would greatly assist China in building up production facilities to meet its deficiencies in explosives, industrial chemicals, rubber products and other essential requirements.

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The current Chinese Five Year Plan also calls for the building of a chemical industrial machinery and repair plant and an oil-refining machinery plant. When these two plants are completed, probably only in 1960, the country will be able to start production of some of its own chemical equipment of the simpler types. However, the plans are not given in detail and it is apparent that China is faced with the creation of an entirely new industry. In this task it also will be almost entirely dependent on imports of technical know-how as well as equipment. In addition the country will have to learn to produce (or will have to import) the proper types of corrosion-resistant raw stock (steel, ceramics, glass, etc.) and precision-controlling equipment used in the production of chemical equipment and products.

The U.S.S.R. and the European satellites, owing to internal shortages, cannot easily supply China with the required quantities of chemical equipment incorporating corrosion-resistant materials and advanced know-how. These materials are in short supply in the entire Bloc.

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**SECRET**(2) Listing of controlled chemical equipment and components with proposed deletions. (Part I)

Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-101	Acid concentrating equipment			
C-102	Ammonia oxidation equipment			
C-104	Liquid/liquid solvent extraction equipment			
C-107	Driers	x		1
C-109	Hydrogen-producing equipment			
C-110	Hydrogenation equipment			
C-111	Methanol oxidation equipment			
C-112	Nitrators			
C-113	Chemical process vessels	x		1
C-114	Gas liquefying equipment			
C-115	Sulphur extraction equipment			
C-116	Sulphur burners			
C-117	Water treatment equipment	x		1
C-118	Heat exchangers			1
C-119	Processing equipment operating at over 200 PSI			
C-120	Distillation equipment			1
C-121	Evaporators	x		1
C-131	Pumps	x		1
C-132	Vacuum pumps	x		1
C-133	Valves and cocks			1
C-140	Containers	x		1

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Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-141	Gauges			1
C-143	Pipe and tubing			1
C-151	Petroleum refining equipment			
C-250	Condenser tubes			1
C-303	Crucibles (graphite)	x		1
C-304	Separators			
C-583	Leak-detecting instruments		x	1
C-620	Platinum (gauges)	x		
C-383	Crushing and screening equipment			1
C-395	Precipitators	x		1
C-571	Precision instruments			1
C-103	Antibiotics production equipment			
C-376	Air conditioning units			

1/ Items under this footnote run the gamut of essential components required in the production of controlled chemicals. It will be noted a number can be interpreted as being covered by equipment defined under C-101, 102, 104, 109, 110, 111, 114, 151, etc.; on the other hand decontrol of the proposed items would provide the means of constructing facilities such as those complete integrated units identified as C-101, etc.

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## Part II

### Chemical and Allied Products

Includes basic chemical products manufactured by predominantly chemical processes. Such products are not generally sold as such to the ultimate consumer, but rather to other manufacturers or formulators.

Chemicals such as acids and alkalies, salts, organic compounds, solvents, gases, pigments and dyes are used, (1) by the chemical industry itself to produce, drugs and medicines, dyes, explosives, fertilizers, paints, plastics, synthetic fibers, synthetic rubber, etc.; (2) other industries in the production of (a) durable goods such as electrical equipment, transportation equipment, machinery, hardware, etc., and (b) non-durable goods such as food products, textiles, rubber products, paper products, petroleum products, etc.

The variety of end uses of basic chemicals and compounds make an accurate evaluation of a "hard core" military potential grouping impractical. For example, calcium carbide (proposed for decontrol by Japan) is a raw material for plastics, insect sprays, vitamins, aspirin, synthetic fibers, synthetic rubber, acetylene gas, etc.

#### (1) Intelligence.

China's present production of basic chemicals to meet the military, industrial, and agricultural needs of the country is woefully inadequate as indicated under Part I above. The development plan of China calls for approximately doubling the 1955 output by 1960, as indicated by the following table:

PROJECTED PRODUCTION OF SELECTED CHEMICALS  
IN COMMUNIST CHINA  
(1,000 metric tons)

Commodity	1955	1960
Calcium Carbide	15.0	30.0
Synthetic Ammonia	62.0	112.5
Refined Naphthalene	5.300	8.200
Chlorine	N.A.	N.A.
Refined Benzol	15.0	28.8
Toluol	3.8	5.8
Xylol	1.300	2.100
Phenol	0.300	0.500
Cresol	0.700	1.100
Caustic Soda	44.5	65.0
Sulfuric Acid	267.0	435.0
Soda Ash	365.1	690.0
Nitric Acid	20.6	40.0
Ammonium Sulfate	360.0	600.0

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Even if the plans can be met (which has been described as questionable), China's growing industry will have a large need for many different types of chemicals.

At the present time, the rest of the Soviet Bloc is not in a strong position to export chemicals to China. In many basic chemicals, particularly in sulfuric acid, there is no exportable surplus in the Soviet Bloc.

Communist China has increased its reliance on the free world for a supply of chemicals. Chemicals have been sought in many trade agreements with the free world. Dyes have figured as one of the preferred items in clandestine procurement efforts and some continue to command a premium price. Chemicals also figured prominently in CHINCOM exceptions.

The only petroleum products or derivatives which have been proposed for decontrol are paraffin wax and petroleum asphalt. Certain forms of petroleum wax are included in the International Atomic Energy List, and therefore must be continued under control for China as well as for other Bloc areas. When petroleum asphalt was proposed for deletion from II-III, its addition to the Special China List was important because Chinese production was believed to be negligible or nonexistent and procurement attempts from the free world were considered to be substantial. Quantities of asphalt are believed to have reached Communist China by clandestine means.

(2) List of controlled chemical and allied products and those which have been proposed for decontrol

The following listing presents the result of an intelligence evaluation of the supply position of the items concerned.

Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-757	Vanadium compounds			
C-730	Glycerine	x	x	
C-738	Paraffin wax, etc.	x	x	1/

1/ Should be redefined.



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Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-742	Permanganates	x		
C-744	Phosphorus	x		
C-752	Sodium cyanide	x		
C-771	Petroleum asphalt	x		
C-717	Calcium carbide	x		
3766	Polyvinylbutyral			
C-702	Flotation reagents, synthetic organic			
C-715	Benzene or benzole			
C-716	Bismuth compounds		x	
C-718	Carbon black	x		
C-719	Cellulose, ethyl			
C-721	Chlorates; and preparations consisting mainly thereof.	x	x	
C-723	Cresylic acid including para-meta and ortho-cresol and xyleneol		x	
C-729	Glycols and their derivatives			
C-740	p-phenylenediamine			
C-756	Tricresyl phosphate	x		
3753	Phenol		x	
3761	Sulphur	x		
C-706	Rubber-compounding agents	x		
C-714	Barium chromate			
C-724	1:2 Dibromoethane (ethylene dibromide)			
C-727	Fluorinated hydrocarbons, as <u>defined</u>			
C-734	Methyl-isobutylketone			

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Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-736	Monochlorobenzene; mononitrobenzene			
C-737	Nitric acid; ammonium nitrate; potassium nitrate	x		
C-741	Perchloric acid; and its salts			
C-745	Phosphoric acid catalyst			
C-746	Phthalic anhydride; and phthalic esters (except alkyd resins)		x	
C-747	Polyisobutylene			
C-751	Silicon(e) organic compounds, n.e.s., as defined.			
C-753	Sulphuric acid:	x		
C-754	Styrene			
C-787	Liquid gum inhibitors			
C-701	Explosives			

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## E. Rubber Products Industry -

### (1) Intelligence.

China's production of rubber products is inadequate. In fact, it has been the target of considerable criticism and even ridicule. With a few exceptions tires are produced by handicraft methods at small plants. The quality is poor. As a result, tires are an import item. Under China's plans of development, the domestic output of rubber products is to be expanded, although this expansion can only take place if additional machinery is obtained from abroad.

Rubber products are not in ample supply in the rest of the Bloc, which is unable to furnish such products to China except by seriously neglecting commitments in other Communist areas. There are unconfirmed reports that other Bloc countries have restricted exports of rubber and rubber products to China as a conservation measure.

There have been unrelenting attempts to procure from the free world tires of all types and sizes through clandestine channels; premium prices have often been paid.

It is believed that a substantial market for tires of all types will exist in China for many years to come. The motor vehicle park of the country is scheduled to increase considerably. The poor quality of Chinese roads will require for many years to come a greater than average replacement of tires. Even considerably increased indigenous production will continue to be outdistanced by demand for the next decade. In substance, therefore, the Japanese and UK proposal would effect the decontrol of most types and sizes of tires for motor vehicles, including many useful for military purposes.

Rubber (product) manufacturing machinery is not currently produced in China and it is questionable if the European Soviet bloc can supply China with its schedule of requirements. The demand for this equipment from free world sources is likely to be strong if controls are removed.

- (2) Listing of controlled equipment essential to the rubber industry; basic materials consumed and resultant finished products, as well as those proposed for decontrol.

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China List No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C 718	Carbon black	x		
C 350	Carbon black manufacturing plant		x	
C 330	Calendars	x		
C 331	Masterbatch mixers	x		
C 332	Tire-curing presses			
C 820	Tires and tubes	x	x	
C 706	Rubber-compounding agents	x		
C 803	Masterbatch		x	
C 805	Rubber scrap and Rubber (3801)		x	
C 802	Rubber solution		x	
C 801	Synthetic rubbers		x	
C 840	Rubber water-lubricated bearings			
C 841	Rubber hose			

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F. Fuel  
(Solid, liquid, gaseous)

(1) Intelligence.

Current Chinese production of mining machinery is inadequate as regards both quality and quantity. Considerable progress has been made by China in restoring a number of small (and heavily cannibalized) plants and some production of simplest type mining machinery has been resumed, but the country is still faced with the creation of virtually a new industry. There have been numerous reports of waste and difficulties in the production of machinery and excessive breakage and other shortcomings in the use of it. The current supply of machinery is insufficient to permit the country to carry out the very ambitious expansion of the production of coal, iron ore, non-ferrous metal ores, cement and other raw materials projected for the current Five Year Plan, and for expansion of exportable surpluses.

Several plants producing mining machinery are scheduled for renovation during the current Five Year Plan. Furthermore a new mining machinery plant, designed by the USSR, is to be completed in China in 1960 when production is scheduled to begin at that plant. This will be the first indigenous source of supply for more complex types of mining machinery.

Mining machinery of all types has been manufactured in other parts of the Soviet bloc for many years. While the bloc supply has not always been adequate, particularly with regard to crushers, it is believed that machinery of the simpler types could be furnished China in limited quantities.

China has sought to obtain mining machinery from the free world for several years. Actual contracts have been concluded for the delivery of such machinery as soon as present COCOM/CHINCOM restrictions are relaxed.

The country currently produces only a part of the crude oil and refined products that it needs. The delivery of petroleum products to China by other members of the bloc is a costly and difficult operation (running of the blockade by sea or costly railroad transport and transshipment with empty tank cars returning for distances of thousands of miles). China is scheduled to expand production of refined products during the current Five Year Plan, especially when full production begins in the Yumen oil fields. Currently China is virtually unable to produce the geological, drilling, prospecting or oil refining equipment or accessories that are required for this development.

*Block is providing equipment  
& Personnel.*

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There has been an increase in the contribution of the petroleum industry to the economic potential of Communist China during the past five years. The output of refined products, only 400,000 tons in 1951, reached about 715,000 tons in 1954. This supply, however, provided only one-third of the country's requirements.

*obsolete*

The crude oil resources of China will support increases in production, but transportation difficulties - both great distances and lack of equipment - together with a shortage of refining facilities, impose restrictions on expansion of the industry. There is a possibility that petroleum refinery output (including synthetic oil operations) may reach 1,000,000 tons by 1960. Even then, however, China would remain dependent upon imports for a substantial part of her growing requirements of petroleum products.

The rest of Soviet bloc produces a sufficiently large amount of petroleum products to furnish China's present restricted needs. However, here again the problem of transportation is one that presents very considerable difficulty. Kerosene and gasoline are a preferred item in illicit trade with free world supplies at the two main Asian ports - Hong Kong and Macao. Moreover, Russian tank cars, which deliver oil to China, have to return empty on a run of several thousand miles, except for those shuttling from Far East Soviet dumps. POL is available only at very considerable economic cost to China as well as the rest of the bloc.

*Some imports over 2.4 million*  
*2 million products*  
*no sea*  
*Spromack*  
*Dec 54*  
*maybe local to Canton*  
*Area*

*Close to 1 million*  
*Two Production in 1955*  
*about 850,000 tons*  
*of about 175,000 from imports*  
*under*

- (2) Listing of controlled fuel items and those proposed for decontrol

China List No.	Short Title	Proposed Deletion		
		Japan	UK	Group Footnote

Section A  
Exploration, drilling and other basic producing operations

C-575	Surveying instruments	x	x	2
C-565	Geophysical prospecting equipment		x	
C-385	Core drills and core drill bits	x		
C-270	Turbines		x	
C-260 - 3265	Electric motors	x	x	1
C-256 - 3265	Diesel internal combustion engines	x	x	1

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China List No.	Short Title	Proposed Deletion		
		Japan	UK	Group Footnote
C-266	Power equipment	x	x	1
C-701	Explosives			
C-131	Pumps	x		1
C-380 - 3809	Compressors and blowers	x	x	
C-381	Portable hand-held power tools	x	x	
C-617	Power cables	x	x	1
C-841	Conveyor belting			1
C-351	Mining equipment and machinery	x	x	
C-470 - 3471	Mine locomotives/parts	x	x	
C-472 - 3477	Rails	x	x	
C-430	Steel cable			
C-321 - 3323	Civil engineering and building equipment	x	x	
C-383	Crushing equipment	x		
C-717	Calcium carbide	x		
C-635	Iron and steel products	x	x	1

1/ Also used in the following section.

FUELS - SECTION B  
REFINING AND PROCESSING

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China List No.	Short Title	Proposed Deletion		
		Japan	UK	Group Footnote
C-151	Petroleum refinery equipment			2
C-120	Distillation equipment			2
C-121	Evaporators	x		2
C-132	Vacuum pumps	x		2
C-250	Condenser tubes			2
C-110	Hydrogenation equipment			
C-104	Liquid/liquid solvent extraction equipment			2
C-119	Processing equipment operating at pressures over 200 PSI			2
C-111	Gauges			2
C-266	Fuel gas plant		x	
C-109	Hydrogen producing equipment			
C-114	Gas liquefying equipment and equipment for handling liquefied gas			2
C-118	Heat exchangers			2
C-110	Containers	x		2
C-583	Leak detecting instruments			2
C-620	Platinum products	x		2
C-113	Pipe and tube			2
C-133	Valves and cocks			2
C-574	Spectro-instruments	x		2

2/ See Intelligence in relation to:

- a. Instruments and control apparatus
- b. Chemical equipment
- c. Chemicals



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G. The Metallurgical Industry

Part I

Basic extraction and processing

(1) Intelligence

An early plan to produce 10 million tons of steel in 1962, has been revised downward for reasons unknown. The most recent realistic estimates of pre-Plan, current and likely future production is given in the following table:

RECENT AND PROJECTED PRODUCTION OF FERROUS METALS  
IN COMMUNIST CHINA  
FOR SELECTED YEARS 1952 - 1960  
(millions of metric tons)

<u>Material</u>	<u>1952</u>	<u>1955</u>	<u>1957</u>	<u>1960</u>
Pig iron	1.9	3.5 3.3	4.2 4.1	5.9 5.7
Crude steel	1.4	2.6	3.8	5.0 5.8
Finished steel	1.1	1.9	3.0	4.2

The planned expansion calls for a great deal of capital equipment which China cannot provide indigenously, for example: 6 automatic blast furnaces; 3 modern steel smelting plants; 16 steel rolling mills; and 4 new fire refractories plants.

At the present time China is not self-sufficient in iron and steel products and imports perhaps 500,000 tons of steel and steel products per year. As steel products are not plentiful in the export sense in the rest of the Soviet bloc, the needs of Communist China cannot be satisfied from this source. Exception requests in CHINCOM-COCOM have been substantial. Significant amounts have been obtained by transshipment and through clandestine channels.

The text of China's Five -Year Plan recognizes that the non-ferrous metals industry is the "weak-link" of China's heavy industry; the development of resources and production facilities of these metals is one of the important tasks of the current plan. An emphasis is being placed not only on modernization of the existing mines and opening up of new ones, but also on geological exploration.

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(2) Listing of controlled metallurgical extraction and processing equipment with proposed deletions.

Part I

Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-565	Geophysical prospecting equipment		x	
C-385	Core drills and core drill bits	x		
C-266	Power equipment	x	x	
C-701	Explosives			
C-131	Pumps	x		
C-380	Compressors and blowers	x	x	
C-381	Portable hand-held power tools	x	x	
C-384	Conveyor belting	x		
C-841	Hose			
C-351	Mining equipment	x	x	
3323	Power operated excavators		x	
C-470	Locomotives	x	x	
C-471	Rolling stock	x	x	
C-472	Rails	x	x	
C-430	Steel cable			
C-321	Engineering and building equipment	x	x	
C-383	Crushing equipment	x		
C-201	Electric furnaces		x	
C-211	Electrodes			
C-301	Foundry plant			

Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-302	Blast furnace equipment			
C-303	Graphite crucibles	x		
C-304	Electrostatic separators			
C-305	Sintering equipment			
C-306	Tinning units			
C-315	Hand-chrome plating plants			
C-316	Metal-spraying equipment			
C-320	Materials - handling equipment	x		
C-395	Precipitators	x		

## Part II

### Minerals and Metals

Includes basic minerals and metals not generally sold as such to the ultimate consumer, but rather to other manufactures and fabricators.

#### (1) Intelligence

The ferrous metal items proposed for decontrol by the UK and Japan include some products which Communist China produces in very limited quantities and others of which Chinese output is of inferior quality. A sufficient supply of iron and steel products is basic to any industrial expansion program as well as to mobilization plans. For example, such products are needed for ship repair, steam boilers, and construction of factories projected under the current Chinese Five-Year Plan.

China has sought to obtain copper, aluminum and several other nonferrous metals and their products from the Satellites, from the USSR, and through clandestine sources from the free world. Premium prices have been paid for some of these items.

The rest of the Soviet Bloc is also critically short of copper, is currently attempting to import significant amounts of mercury, aluminum and bauxite.

Commodities of high production cost in the Bloc, as compared with the US include most nonferrous metals and minerals, coaxial cable (made of copper, steel, lead, etc.), magnetic materials

(cobalt, etc.), aluminum, cobalt, columbium, copper, mercury, molybdenum, nickel, and bismuth. These high Bloc costs are believed to be explained by low-quality ores, inconvenient geographic locations, low-rate of capital investment and relatively inefficient use of machinery.

Graphite crucibles and graphite to make crucibles are used in the making of fine grade tool steel, and aluminum. Graphite is also used to make electric motor brushes, as a lubricant, in paint and in pencils. It is treated here as one of the inputs for the metallurgical industry because of the strategic significance in this application. China's current supply of graphite appears to be inadequate.

(2) List of controlled minerals and metals and those which have been proposed for decontrol.

Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-661	Potassium metal		x	
C-670	Zirconium: metal and compounds			
C-620	Platinum products	x		
C-630	Aluminum or aluminum alloys	x		
> C-635	Iron and steel products	x	x	
C-643	Ferrochrome			
C-655	Mercury and its compounds			
C-658	Molybdenum compounds			
C-660	Nickel catalysts			
C-662	Sodium (metallic)	x		
C-664	Sulphur-bearing pyrites	x		
C-668	Vanadium			
C-641	Cadmium			
C-663	Strontium			
C-665	Tin		x	
C-666	Ferrotitanium			
C-667	Tungsten			

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Item No.	Short Title	Proposed Deletion		Group Footnote
		Japan	UK	
C-651	Lithium (except metal, compounds, ores and concentrates included under IL A-35)			

Note: It is the US position that Item C-651  
is covered by International Atomic  
Energy List Item 35.

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Part III

ENGINEERING (FABRICATION) EQUIPMENT

(1) Intelligence.

Machinery is needed by Communist China to develop production of other machine tools as well as to develop production of critical components of such end items as freight cars and locomotives, tractors, motor vehicles, general industrial equipment and military items, for which it is now dependent on outside sources.

The success of China's Five Year Plan to a considerable extent will depend on the availability of machine tools which, in the long run, will depend on the completion of a number of key plants on schedule. It is also believed that the quality of China's machine building will be largely dependent on the availability of technical and material aid extended to it by the rest of the Soviet Bloc. Even when present plans have been completed, China will continue to depend on imports of many kinds of metal working machinery for many years to come.

At the present time, most of the machinery suggested for decontrol is either not being produced in China or is produced in small quantities and in very limited sizes; currently, only about 70 types are being built, many of them reflecting significant shortcomings persisting in the machine tool industry. All of the drilling lathes produced in the first quarter of 1955, numbering 380, were returned "due to wrong procedures in manufacturing; the item of wasted parts alone cost 1.2 million yuan".

The machine tool production of the rest of the Soviet bloc is very large in terms of numbers and value. Certain types of tools, however, are in short supply - particularly metal - forming machines such as presses and precision casting machinery. Some types of grinders are also in short supply. In the general subgroup of metalcutting machinery, however, the Bloc is in a fairly strong position to fill China's needs with a minimum of inconvenience, although not in all types.

Some metal cutting machines are being exported by the European satellites to some underdeveloped areas as part of barter arrangements and for propaganda purposes.

Data on over-all imports of machine tools into Communist China are not available. A recent report states that China has placed an order for 2,000 grinders in a western country (non-COCCOM member). These machines were of the small type which would be

useful in a garage or a maintenance shop. The value of the order is not known, but if it is assumed that each machine would be worth \$500 (which is a minimal figure), the total order would amount to \$1 million, making it one of the largest placed recently.

Currently bearings have been sought from the free world through legal and other sources. They have been a preferred item in clandestine trade. Bearings and parts of all types and sizes, but mainly of the middle (II-II) range, have figured in this trade. They can be used in trucks, heavy machine tools, and railroad rolling stock.

The supply of abrasives in Communist China is inadequate and numerous procurement attempts have been made through clandestine channels. The supply of high-grade abrasives and grading wheels in the rest of the Soviet Bloc is not abundant and it would be difficult for the Bloc to supply China without considerable replanning.

As Communist China's industrialization advances, an even greater market will develop for bearings and parts of all types including unmounted balls.

(2) Listing of controlled metallurgical engineering equipment and components with proposed deletions

Part III

Item No.	Short Title	Japan	UK	Group Footnote
C-001	Metalworking machinery and accessories	x	x	
C-260	Electric motors	x	x	
C-375	Abrasives	x		
C-381	Portable hand-held power tools	x	x	
C-380	Compressors	x	x	
C-266	Power equipment	x	x	
C-366	All tools incorporating diamonds			
C-387	All articles incorporating diamond abrasives			
C-210	Welding machines	x	x	
C-566	Measuring and testing equipment	x	x	

Item No.	Short Title	Japan	UK	Group Footnote
C-601	Anti-friction bearings	x		
3008	Multi-station machine tools	x	x	1
3010	External cylindrical grinding machines	x	x	1
3011	Internal cylindrical grinding machines	x	x	1
3012	Combined internal and external cylindrical grinding machines			
3017	Single-spindle surface grinders	x	x	1
3018	Crankshaft, crankpin and camshaft grinder		x	1
3034	Axle lathes	x	x	1
3050	Automatic milling machines		x	1
3055	Horizontal draw-cut shapers	x	x	1
3067	Metal cutting and working tools	x	x	1
3068	Carbide and carbide-tipped cutting tools or dies	x	x	1
3072	Presses, mechanical and hydraulic	x	x	1

1/ Due to the overall control of metal-working cutting and forming tools exercised under the China item C-001 definition (the decontrol of which both the UK and Japanese have proposed) their proposal to decontrol noted COCOM I/L III items appears to be a move to establish exceptions the scope of which would reduce control of this area to a degree that its effectiveness would be lost. The lifting of this burden from the European Soviet bloc would soon be recognized by increased Communist trade in underdeveloped areas subject to economic penetration advantageous to communist objectives.



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## 4. Items of Least Advantage to the Military Potential of Communist China.

The following list of "China Differential Items" have been compiled on the basis of (1) essentiality to the functions previously described, and (2) items which are demonstratively not in short supply in the Sino-Soviet Bloc. Consideration was also given to complexity, know-how, availability of satisfactory substitutes, and quantity of requirements. A small number of items are being further researched to determine whether or not they would qualify for inclusion to this list.

Item No.	Short Supply	Japan	UK
C-562	Cartographic equipment		x
C-352	Equipment for the manufacture of synthetic fibres		
C-578	Warburg apparatus		
C-680	Asbestos		
C-920	Photo-plan printing		
C-625	Tinplate	x	x
C-905	Asbestos textiles		
C-142	Plastic moulding machines		
C-930	Nylon products		
C-315	Hard chrome plating equipment		
C-388	Dynamometers		
C-640	Antimony		x
C-642	Calcium metal		
C-669	Zinc	x	x
C-685	Mica		
C-690	Steatite		
C-704	Metallo artificial colouring		
C-705	Hydraulic fluid (castor oil base)		

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Item No.	Short Title	Japan	UK
C-710	Acetic acid	x	x
C-711	Acetone	x	x
C-712	Aluminum chloride		
C-713	Anidine		
C-720	Cellulose nitrate	x	
C-722	Chromium compounds	x	x
C-728	Formaldehyde		
C-731	Hydroquinone	x	
C-732	Iso-propylalcohol		
C-733	Methanol	x	
C-735	Methyl methacrylates	x	
C-739	p-aminophenol		
C-743	Persulphates		
C-755	Thallium bromiodide		
C-758	Vinyl	x	x
C-770	Naptha		
C-788	Coke-coke flour		
C-905	Asbestos textile		